DOCUMENT RESUME

ED 076 072 FL 003 994

AUTHOR Backus, Robert L.
TITLE Two Modes of Counting in Japanese.
INSTITUTION California Univ., Berkeley. Japanese Linguistics Workshop.
PUB DATE Dec 72
NOTE 21p.
JOURNAL CIT Papers in Japanese Linguistics; v1 n2 p174-194 Dec 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Chinese; Criteria; *Descriptive Linguistics; Diachronic Linguistics; *Japanese; Language Development; Language Research; Language Styles; Linguistic Theory; *Nominals; Numbers; *Number Systems; Psycholinguistics; *Semantics; Suffixes

ABSTRACT

This paper seeks to formulate a principle that explains the working of the Japanese number system with respect to Japanese nouns and that defines the kinds of nouns and contexts that condition the forms of number expressions. It is the author's theory that in applying numbers to nouns, the Japanese make a formal distinction between things they conceive as being independent and self-contained and things they conceive as being dependent and attributive. A form containing a classifier implies that the object of quantification is felt to be independent; a form that omits the classifier implies that the object is felt to be attributive to something else. The author enlarges upon these theories and discusses exceptions which can be attributed to language styles or particular derivations. He establishes the categories of count noun, numeral suffix, numeral adjunct, and numerical compound to formalize his discussion. Concluding remarks concern Chinese. (VM)

FILMED FROM BEST AVAILABLE COPY

Papers in Japanese Linguistics
Vol. 1:2. December 1972

PERMISSION TO REPRODUCE THIS COPY RIGHTED MATERIAL HAS BEEN GRANTED BY Robert L. Backus

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER.

ED 076072

Two Modes of Counting in Japanese

Robert L. Backus
University of California, Santa Barbara

It is taught in every school grammar that Japanese is a language that employs classifiers in the application of numbers to nouns. For example, a form like goniñ no niñsoku 'five laborers' is literally 'five human beings of laborer', with the suffix -niñ 'human being' referring the noun generically to the category of human beings. Yet one need not get beyond the primer level before encountering forms in which a number precedes a noun directly, like gopeezi 'five pages', gokai 'five storeys', and gokumi 'five groups', which are left unexplained. Moreover, it takes but little further experience with the language to bring one into contact with such number-noun forms as gokoomoku 'five items', godañkai 'five stages', gobiñ 'five bottles', go niñsoku 'five laborers', and go daiyakusya 'five great actors'.[1] And still further experience will eventually leave the impression that a form like go niñsoku is severely restricted in comparison with go daiyakusya, while go-koomoku, godañkai, and gobiñ are commonplace. Clearly, then, Japanese does permit the application of numbers directly to nouns. Furthermore, for some nouns and in certain contexts it requires that form, whereas for other nouns and in other contexts it requires the insertion of a classifier to complete the expression. My purpose in writing the present article is to formulate a principle that explains this plurality of forms and uses, as well as to define the kinds of nouns and contexts that condition the forms of number expressions.

To begin with, let us compare two sets of nouns in regard to the frequency with which they occur preceded by a number or by a number with a classifier. The forms in the left-hand column are common; those in the right are either unusual or severely restricted.

Set One

common no. + cl. + noun	uncommon no. + noun	
goniñ no niñsoku	go niñsoku	'five laborers'
itutu[2] no kumiai	go kumiai	'five labor unions'
itutu no tosi	go tosi	'five cities'
itutu no katei	go katei	'five households'
itutu no moñ	gomoñ	'five gates'
goniñ no hei	gohei	'five soldiers'

Set Two

common no. + noun	uncommon no. + cl. + noun	
gokoomoku	itutu no koomoku	'five items'

FL003994

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

common no. + noun	uncommon no. + cl. + noun	
godañkai	itutu no dañkai	'five stages'
gobameñ	itutu no bameñ	'five scenes'
goheya	itutu no heya	'five rooms'
gomozi	itutu no mozi	'five written characters'
gozi	itutu no zi	'five written characters'
gokai	itutu no kai	'five storeys'
gokumi	itutu no kumi	'five groups'
gokazoku	itutu no kazoku	'five families'
gosyurui	itutu no syurui	'five kinds'

When compared with the nouns in Set One, it should be apparent that those in Set Two denote attributive entities. The last three denote collections of individuals, while the remainder designate members of systems, i.e. items in a contract, stages of a process, scenes in a play, rooms and storeys of a building, and written characters in a word or sentence. The examples in Set Two are by no means isolated cases; there are over a hundred of them by the strictest criteria of selection. From this evidence I conclude that in applying numbers to nouns the Japanese make a formal distinction between things they conceive as being independent and self-contained and things they conceive as being dependent and attributive.

Inspection of the forms through which this conception of things manifests itself indicates that a form containing a classifier implies that the object of quantification is felt to be independent, and a form that omits the classifier implies that the object is felt to be attributive to something else. This distinction becomes all the more conspicuous in the case of objects that can be clearly perceived as being now in the one condition and now in the other. Consider the following comparisons:

gomai no peezi	gopeezi	'five pages'
gohoñ no biñ	gobiñ	'five bottles'

The numerical form gomai counts pages as flat objects; one may imagine them lying out separately on a table. Gopeezi, on the other hand, denotes five pages in a book. Gohoñ counts bottles as long objects, whereas gobiñ denotes five bottles of something, presenting the bottles as measures of their contents rather than as objects in themselves.

Pages and bottles represent objects of a kind that, depending on the situation, are regarded alternately as self-contained or attributive. Such objects are few; and if one tries to enlarge the group, he soon finds that container words offer the best prospects, such as hako 'box', hukuro 'bag', kago 'basket', kañ 'can', oke 'bucket', sara 'plate', sazi 'spoon', and

tutumi 'package'.[3] Most nouns, by contrast, denote things that are intrinsically either self-contained or attributive; and language habit requires that when counting these things, the speaker ordinarily should use a classifier to stress the particularity of a self-contained thing and omit the classifier to avoid stressing the particularity of an attributive thing.[4]

It is because of this habit that we are compelled to subdivide Japanese nouns in order to understand the behavior of numerical forms. Those in Set One represent the very large subdivision of class nouns, so called because the things they denote are ordinarily classified at the same time as they are quantified; and those in Set Two represent the smaller subdivision of count nouns, so called because the things they denote are ordinarily counted directly by a number-noun form which, strictly speaking, is a compound. Furthermore, 'ordinarily' is an important qualification to the above statements, because extraordinary contexts lead to an overriding of the habit, which results in extranumerical connotations. The next task, then, is to define as precisely as possible those contexts which permit or require the omission of the classifier with a class noun and its inclusion with a count noun.

In general, the effect of describing or restricting a thing by putting a modifier into relation with a noun is to enhance one's sense of the particularity of that thing. In this respect the classifiers in number expressions may be likened to adjectives and demonstratives. On the other hand, their constant occurrence with class nouns certainly erodes their particularizing force; and if it were not for the contrasts that arise from their regular omission with count nouns and sporadic omission with class nouns, their value in number expressions might not be very significant.[5] Nevertheless, whatever may be the positive value of any given classifier when it appears, the effect of its disappearance in the presence of a class noun is noticeable; the omission erases whatever interest there may be in the enumerated objects themselves and presents them as a collectivity.

In one form of this mode of counting, where the number modifies the noun by means of the particle no, the numbers are restricted to multiples of ten (zyuu), hundred (hyaku), thousand (sen̄), ten thousand (man̄), and hundred million (oku). These units function like collective nouns, and it is the collectivities that are being counted rather than the individuals that make them up.[6] Here are some examples:

suuzyuu no teki 'several dozen of the enemy'

nisen̄ ya sanzen̄ no asigaru 'two or three thousand foot soldiers'

zatto zyuuman̄ no hito 'roughly a hundred thousand people'

Such forms are characteristic of reportorial and expository prose, where the writer's concern is with statistics instead of individuals. In these examples the missing classifier is -nin̄ 'human being', which would more likely than not be supplied in speech; though even in a style that shows no particular striving for a reportorial tone, dropping the classifier from the large collectivity man̄ feels perfectly natural.[7]

Forms are also found in which a number directly precedes a class noun without the particle. In this case there is no restriction on the numbers that may be used.[8] On the other hand, it is clear that certain kinds of class nouns are incongruous in this environment. Defining the criteria by which these nouns are excluded, however, still eludes my best efforts. Nevertheless,

the following observations are relevant to such a definition. Forms in which a number combines with a noun denoting a self-contained entity have exact counterparts in Classical Chinese despite the fact that that language also uses classifiers (Schafer 1948: 408). There can be no doubt that the presence of such forms in Japanese results from imitation by Japanese writers of Classical Chinese styles; and it is therefore not surprising that in most instances the noun is either a Chinese loanword or one made up of Chinese morphemes. We may assume, then, that any noun of that type has access to this environment. Still, native nouns are not excluded, nor for that matter are Western loanwords. In this connection it is worth noting that the conciseness of the form number-noun is probably what recommended it to Classical Chinese authors, most of whom put a premium on terseness. This same quality recommends it to Japanese writers in the formal and academic styles, who in addition are sensible of its Classical Chinese origin and get much the same feeling from it as we do from a composition sprinkled with Latinisms. Among the native nouns and Western loanwords, then, we may assume that only those which are congenial to a formalistic tone will occur here; and in practise they seem to be limited to nouns that denote conceptual entities as opposed to perceptual or physical objects.[9]

When a number combines directly with a noun, the noun tends to lose its particularity both on the formal and on the semantic levels. This is seen formally in the virtual exclusion of modifying elements from the position between the number and the noun as well as in the assimilation of certain numbers to certain nouns, especially monomes, resulting in compounds.[10] Furthermore, many of the monomes that appear in this kind of counting are bound forms to begin with rather than nouns, even though they are nouns in Chinese and retain the full semantic value of class nouns in Japanese. In the following, the compound sitisen̄ 'seven ships' exemplifies the use of bound monomes as quasi-nouns in this kind of counting.

ken̄toosi Huziwara no Tunetugu no ikkoo no sitisen̄
'the seven ships of the party of Fujiwara no Tsunetsugu, emissary to T'ang'

The fact that count nouns, with their attributive meanings, regularly combine with numbers suggests that such combinations imply a submergence of the particularity of the thing into a larger whole. Evidently it is because that implication contradicts the independence of the kind of entities denoted by class nouns that numbers do not combine with those nouns except under special conditions. The following examples come from written sources, where one can account for their appearance mainly on grounds of the reportorial tone and statistical interest of the writers; though at the same time we should not discount the probability that in some cases (as perhaps in the first example) such forms are chosen primarily for their conciseness and academic flavor.

Doki keisiki wa ni keisiki ni wakerareru.
'Earthenware forms are divided into two forms.'

kumiaiin̄ no retugo no ippei 'a fighter in the ranks of the union members'

San̄zyuttosi o koeta to iu. 'They are said to have exceeded thirty cities.'

Kumiai suu wa nihyaku yon̄zyuu rokkumiai de aru.
'The number of labor unions is two hundred forty-six.'

zenkoku happyaku nizyuu siti daigaku
'the eight hundred twenty-seven universities throughout the country'

In no case of a number preceding a class noun is the idea of collectivity more apparent than when this combination is used to count things that are apprehended as a set. Although the number indicates how many members belong to the set, it is the set as a whole, and not the members individually, which constitutes the object of attention. Sets of things are enumerated in exactly the same manner in Classical Chinese too; and both languages share a lexicon of conventional sets such as sisyo 'the Four Books', si tennoo 'the Four Deva Kings', and happoo 'the eight directions', which provide models for a continuing production in Japanese.[11] Not only are there regularly used lexical items like zyuu ni sito 'the Twelve Apostles' and san daibutu 'the Three Great Buddhas', but ad hoc sets may be coined at will in both speech and writing.

Nihon no yon dai kabuki yakusya 'the four greatest kabuki actors of Japan'

Kenedii Zyonson no ni daitooryoo 'Presidents Kennedy and Johnson'

rizisya, kyoozyu, gakusei no sansya no hanasiai
'tripartite talks between the trustees, professors, and students'

Finally, there is a variation on the type just illustrated where the number follows the noun it modifies. This order also appears in Classical Chinese (Schafer 1948: 409), and in both languages it connotes the impersonality of an inventory. As far as Japanese is concerned, the order is not confined to actual inventories, but it does contribute an inventorial tone whatever its context. With classifiers omitted as in the following examples, this manner of counting is restricted to formal writing.[12]

haiku yon, kansi yon, kansityoo no tyooku zyuu kara naritatte iru rensaku
'a composite work consisting of four haiku, four Chinese poems, and ten long verses cast in the Chinese manner'

sensi zyuu iti, husyoo zyuu san o dasite
'suffering eleven dead and thirteen wounded'

tyuui ni hei iti o tukete 'with one soldier assigned to the lieutenant'

So far as I can ascertain, the conditions described on the preceding pages are sufficient to explain all occurrences of a class noun with a simple number; and the psychology that I feel underlies these occurrences is a sense of collectivity, impersonality, or statistical generality that makes the descriptive and particularizing value of a classifier seem inappropriate to the special contexts. And so in those contexts the habit of alluding to the independent status of the kind of entities denoted by class nouns is suppressed with the omission of the classifier. The case of count nouns, on the other hand, is exactly the opposite; as nouns denoting attributive entities, they are ordinarily combined with simple numbers so as to avoid particularizing things that belong to larger wholes. Nevertheless, in some contexts an entity that is ordinarily attributive may be perceived as self-contained, so that a numerical form which particularizes it becomes acceptable or even necessary.

Such contexts are described in the following discussion of count nouns, but the ones given are probably representative rather than exhaustive.

Container words have already been mentioned. They denote perceptual entities that stand as discrete and self-contained objects unless they are conceived as measures of their contents. Hence the difference between gohon no bin 'five bottles' and gobin no kusuri 'five bottles of medicine' should be self-evident. Close to container words in their concreteness are partitives such as kakera 'fragment', kabu 'rootstock', and tubu 'grain'. These objects may be perceived in one case as independent:

garasu no kakera itutu	'five glass fragments'
kiku no kabu itutu	'five chrysanthemum stocks'
kome no tubu itutu	'five rice grains'

and in another case as attributive:

gokakera no garasu	'five fragments of glass'
gokabu no kiku	'five stocks of chrysanthemums'
gotubu no kome	'five grains of rice'[13]

At the opposite extreme from container words and partitives we find standard measures like meetoru 'meter', kin 'catty', and en 'yen', together with time units such as zikan 'hour', syuu or syuukan 'week', and ban 'evening'. These nouns denote highly conceptual entities that are never thought of as individually separate from the things they belong to, that is, the things being measured in the one case and the flow of time in the other. Therefore they are never particularized by a classifier. If one wishes to speak of a particular unit, the noun is always accompanied by the number 'one', as in sao no kono itimeetoru 'this meter of the pole' and omosiroi itizikan 'an interesting hour'. Otherwise, the noun denotes a type of unit rather than a particular unit, as in meetoru de arawasu 'to express it in meters'.

Between these two extremes fall three groups of count nouns which denote entities that are ordinarily treated as attributive but once in a while may be found standing in number expressions as things in themselves. They are generic units, collective units, and members of systems.

The group of generic units comprises a few count nouns that function in the same way as classifiers. It includes ku 'verse' for counting haiku and senryuu poems, mon 'question' for counting questions and problems, and kyoku 'musical piece' for counting songs and segments of musical performances. Ordinarily these entities are enumerated in an attributive relation to specific things that belong to their genus:

taisetu na haiku goku	'five important haiku'
muzukasii mondai gomon	'five difficult problems'
omosiroi uta gokyoku	'five interesting songs'

But when a modifier is present as in these examples, its particularizing

force makes it possible to enumerate these entities as things in themselves:

itutu no taisetu na ku	'five important verses'
itutu no muzukasii mon̄	'five difficult questions'
itutu no omosiroi kyoku	'five interesting pieces'

There are also only a few count nouns that denote collective units, the most important being syurui 'kind', kumi 'group', and kazoku 'family'.

gosyurui no bara	'five kinds of roses'
gokumi no nin̄soku	'five gangs of laborers'
gokazoku no Amerikazin̄	'five families of Americans'

Probably the context in which one is more likely to find these units particularized is where they stand alone, with the things they refer to being only implied; but the following are also possible:

bara no syurui itutu	'five rose types'
nin̄soku no kumi itutu	'five labor gangs'
Amerikazin̄ no kazoku itutu	'five American families'

Nouns that denote members of systems make up the largest percentage of count nouns after standard measures. I have identified some ninety of them, roughly equally divided between monomes on the one hand and binomes together with other kinds of nouns on the other. Perhaps the most convenient way to illustrate the kinds of entities denoted by these count nouns is to name the systems and give the more common units that compose them.

General classification: mon̄ 'order', bu 'division', rui 'class', syu 'kind'; also bumon̄ and burui as nonspecific units denoting any category in this system.

Biological classification: eight categories from mon̄ 'phylum' to hen̄syu 'variety', together with burui, which denotes any of these categories.

Governmental, commercial, and academic organizations: kyoku 'bureau', bu 'department' or 'school', gakubu 'school', gakka 'academic department', etc., together with bukyoku 'division', which denotes any division of a governmental or commercial organization.

Territorial organization: ken̄ 'prefecture', ku 'district', tyoo 'ward' or 'town', syuu 'U.S. state', etc., together with the nonspecific units kukaku 'division' and kuiki 'area' or 'zone'.

Systems for organizing written material: maku 'act', ba 'scene', together with the nonspecific bamen̄ 'scene'; kañ 'volume', goo 'number'; bu or hen̄ 'part', syoo 'chapter', etc. for books; zyoo 'article', koo 'clause', etc. for contracts, and koo 'clause', moku 'item', etc. for budget statements, together with the nonspecific koomoku 'item'.

In addition there are such conceptual units as ka and gakka 'lesson', kamoku 'academic subject', kyuu and gakkyuu 'school grade', tookyuu 'grade', kai and kaikyuu 'rank', ten̄ 'point', hyoo 'vote', tañi 'unit', and ha 'interest group' with its subdivisions tooha 'political faction', ryuuha

'school' of thought, etc., syuuha 'religious sect'; as well as perceptual units such as zi and mozi 'written character', iro 'color', koma 'frame' of a film, peezi 'page', me 'stitch' or 'mesh', dan 'stair', kai 'storey' or 'floor', and heya 'room'.

Although members of systems are hardly ever particularized by a classifier, at least for most of them the possibility of being so treated does exist. Concerning this possibility, we may say in general that monomes are less likely to be found with a classifier than other kinds of nouns; and if this group includes nouns that are never particularized, they will be found among the monomes. A second generalization that may be made is that insofar as one of these entities is perceptual and capable of being perceived separately from the thing it belongs to, to that extent it is capable of being particularized by a classifier. However, if the system is explicit, even the most perceptual or concrete units must be treated as attributive to it: for example, goheya no uti 'a five-room house', gozi no bun 'a sentence of five words', gopeezi no panhuretto 'a five-page pamphlet'; or alternatively, Kono uti wa goheya da 'This house has five rooms' and so forth. But when the system is not mentioned, a greater latitude exists for treating the more perceptual members of systems as entities in themselves. Pairs such as the following could be conceived for many of the nouns cited above:

goheya soozi suru heya o itutu soozi suru	'to clean five rooms'
Gozi otite iru. Zi ga itutu otite iru.	'Five characters have been omitted.'
Gopeezi kakete iru. Peezi ga gomai kakete iru.	'Five pages are missing.'

Note also how the presence of a modifier enhances the individuality of a unit, thus permitting the use of a classifier: itutu no omosiroi syoo 'five interesting chapters'.

The data and generalizations derived therefrom which have been presented so far should be sufficient to justify the subdivision of Japanese nouns into class nouns and count nouns according to the way they are treated in counting; though the reader may wish to reduce the corpus of count nouns by subtracting those which on further examination are found to be incapable of particularization in any context. Subtracting such nouns, however, will not enlarge the division of class nouns, but will merely create a new division of nouns that behave like bound forms when combined with numbers. This fact suggests that a count noun in a number expression where it is not particularized is formally no different from what I have been calling classifiers, for classifiers are all suffixes; and in actuality I have been operating on that premise by invariably transcribing the form number-count noun as a compound. It remains now to state the criteria for assimilating count nouns to classifiers, and at the same time to set up the formal categories of 'count noun', 'numeral suffix', 'numeral adjunct', and 'numeral compound', which will permit precise statements concerning the expression of number in Japanese.

The term 'classifier' is an expedient that allowed me to refer indefinitely to suffixes that are attached to numbers and serve to particularize objects of quantification by tagging them as members of various categories. The ones encountered in this article were -tu, -ttu for nondescript objects,

-hon for long objects, -mai for flat objects, -ko for objects as tangible items, -nin for human beings, and -mei for human beings as items. But these represent only one of a number of semantic subdivisions of a much larger class of suffixes--a class consisting of bound forms suffixed to numbers, whose function is to specify units that are counted with reference to a conceived entity. According to this definition, then, the expression gonin no ninsoku is literally 'five human beings of the entity laborer'. The class of suffixes just defined will be designated 'numeral suffixes'. It comprises in addition to the classifiers the following semantic subdivisions: container units such as -hon for counting bottles of beverages (gohon no biiru 'five bottles of beer') and -hai for counting food and drink in wide-mouthed containers (bowls of rice, cups of coffee, glasses of water); partitive units such as -huku for doses of medicine and -teki for drops of liquid; collective units such as -soroi 'set' and -tui 'pair'; time units such as -niti 'day' and -kagetu 'month'; and finally units belonging to systems and series such as -asi 'step', -ho 'pace', -haku 'beat' as a rhythmic measure, -ko 'residential unit', and -seki 'jewel' as a component of a timepiece.

The larger entities to which these suffixes refer--what I shall call their referents--are obvious for the classifiers, container units, partitives, and collectives since they are always mentioned; but with time units and units of systems and series the referent is not so obvious, because it is often implied in the meaning of the suffix and therefore not specified by a noun. The referent for time units is the concept of time itself, though sometimes a concrete representation of time is specified by a referent noun as in gokagetu no hookoo 'five months of service'. The referent for units of systems and series is the entity or process which the system or series constitutes: locomotion consisting of steps or paces, rhythm such as the pulse consisting of beats, and an apartment building or suburb consisting of residential units.

From this description of numeral suffixes it is evident that they are semantically analogous to count nouns. Not only does their semantic range parallel that of count nouns, but the description of a count noun as a noun that denotes an attributive entity implies the existence of a referent to which the entity is attributive and to which the count noun therefore refers. Furthermore, if we examine the sources from which numeral suffixes are derived, we will notice one more point of similarity between these forms and count nouns. Numeral suffixes are derived from three sources:[14]

1) Classical Chinese loanwords which in their original language are free forms but in Japanese are bound. -Nin 'human being', -tui 'pair', -teki 'drop', -niti 'day', and -haku 'beat' were converted without a change in meaning; but in many cases the Japanese suffix is an abstraction of the Chinese noun, as when -hai 'cup' is used to count things in wide-mouthed containers, -hon 'base of a tree' to count long things and beverages by the bottleful, -mei 'name' to count human beings as items, -ko 'door' to count residential units, and -seki 'stone' to count jewels in a timepiece.

2) Bound forms of native origin. -Soroi 'set' comes from the verb sorou 'to become complete'. Other examples are -nigiri 'handful' from nigiru 'to grasp'; -huri to count swords and halberds, from huru 'to brandish'; and -hira to count flat, pliant objects, from hira- 'flat'.

3) Loanwords and native words which are nouns in Japanese. But it is important to note that in every instance the concrete meaning of the noun undergoes abstraction when the form is combined with a number. This justifies treating them as suffixes. Asi 'foot' becomes -asi 'step'. Other examples are suzi 'fiber' or 'stripe' converted to -suzi for counting strip-

like things from lengths of cloth to arrows (gohon̄ no suzi 'five fibers' as opposed to gosuzi no nuno 'five strips of cloth'), and seki 'seat' converted to -seki 'session' (itutu no seki 'five seats' as opposed to goseki no otya 'five sessions of the tea ceremony').

As these origins reveal, the Japanese drew upon material of substantive semantic value to create their numeral suffixes; and even though in many cases original concrete meanings were generalized in the conversion, the fact remains that numeral suffixes differ from other suffixes in having substantive and descriptive values rather than abstract functions. Count nouns may be regarded as an additional source of forms denoting attributive units, differing from the nouns in the third group above only in that they undergo no change of meaning when combined with numbers. These semantic similarities alone I feel are sufficient to associate count nouns with numeral suffixes under a higher order of forms, for which I shall reserve the term 'numeral adjunct'. Numeral adjuncts may be defined semantically as forms denoting attributive units, both descriptive and substantive, which in number expressions are counted with reference to an independent entity.

However, the association of count nouns with numeral suffixes does not rest only on a semantic argument. It may be demonstrated formally as well by distinguishing the number compounds built on numeral suffixes and count nouns from other kinds of number compounds. The other kinds are compounds resulting from the assimilation of a number to a class noun, as well as compounds consisting of a number (usually 'one') with a bound form that have the status of lexical items and will be called here simply nonce forms.[15] Whether a number combines with a numeral suffix or with a count noun, the result is one type of compound, which will be designated a 'numeral compound'. Numeral compounds differ formally from the other kinds of number compounds in two ways: in numeral compounds the number may be replaced by the number substitute iku- 'how many' (e.g. ikunin̄ 'how many people?' ikukoomoku 'how many items?'); and numeral compounds may take the ordinal suffix -me (e.g. gonin̄-me 'the fifth person', gokoomokume 'the fifth item'). Neither of the other kinds of number compounds can be modified in these ways. Moreover, there are two other features of numeral compounds which help to differentiate them from compounds formed on class nouns but which they share with the nonce forms. Numeral compounds and nonce forms may function as adverbs, whereas compounds formed on class nouns do not; and the native numerals (hito-, huta-, etc.) participate in the formation of numeral compounds and nonce forms but not in the formation of compounds with class nouns. Both these features are illustrated in the following examples: Hitori kita 'One person came', where hitori is a numeral compound in the adverbial position; and hitokoto itte aku 'to say a word', where hitokoto is a nonce form in the adverbial position.

Further, as to the propriety of considering a form like gokoomoku a compound rather than two words in sequence as go ninsoku is, this gets support from analogizing numeral compounds that can be analyzed into two free forms to those which cannot be so analyzed. Specifically, a form composed of a native numeral and a numeral adjunct is a compound because the native numerals are bound forms; a form having a numeral suffix for its adjunct is a compound because the suffix is bound; and any form exhibiting assimilation between the number and adjunct becomes a compound by virtue of the assimilation.[16] Those forms which do not fall under the descriptions just given will in every case consist of a number from the Sino-Japanese system and a count noun combined without assimilation; but since they possess the two distinctive features of numeral compounds, they are by analogy with the others to be considered compounds rather than two free forms in sequence.

The formal distinctiveness of numeral compounds reflects their semantic distinctiveness as forms that specify and enumerate attributive units in reference to self-contained entities. The fact that some numeral compounds, such as those enumerating time units, hardly ever have a stated referent, or the fact that one compound may quantify its referent (gosatu no hon̄ 'five books') while another constitutes it (gosyoo no hon̄ 'a book of five chapters') should not be allowed to obscure this basic relationship between a numeral compound and a referent. If a numeral compound occurs by itself, some other thing to which it refers is always implied. As for the difference between gosatu no hon̄ and gosyoo no hon̄, I regard it as simply two aspects--quantitative and constitutive--of a single reference, which are conditioned partly by the meaning of the numeral adjunct and partly by the meaning of the referent.[17] In the following pairs of examples, although opposition of a quantitative to a constitutive reference yields different translations, the reference itself should be seen uniformly as one in which an attributive unit is being enumerated with respect to an independent entity.

itutu no tatemono	'five buildings'
itutu no kodomo	'a child five years old'
gomai no kami	'five sheets of paper'
gomai no syorui	'a five-page document'
gokoomoku no yookyuu	'five demands' or 'a five-point demand'
gokoomoku no keiyaku	'a contract with five items'
goma no heya	'five rooms'
goma no ryokan̄	'a five-room inn'
gosyaku no nuno	'five feet of cloth'
gosyaku no sao	'a five-foot pole'
gopeezi no suuzi	'five pages of figures'
gopeezi no syorui	'a five-page document'
gozi no kan̄zi	'five Chinese characters'
gozi no bun̄	'a five-character sentence'

If we define the referent of a numeral compound as being 1) an entity that is regularly conceived of as self-contained and independent, and 2) an entity (denoted by a count noun) which in certain contexts may be so conceived, then we may extend the first part of this definition to cover class nouns modified by numbers, and speak comprehensively of referents of numerical forms. From this standpoint we may view number expressions in Japanese as belonging to one of two modes of counting: a minor number-referent mode, which is restricted to contexts that suit its connotations of collectivity and impersonality, or a major compound-referent mode that reflects the Japanese habit of particularizing what appears to them to be self-contained entities. Further, when we consider that the habit of particularization results in a distribution of quantifiable things into categories, we readily perceive that there exists no numerical form in that language which is not tied down to a specific set of circumstances. Although a tendency toward uniformity is evident in speech at least, it does not show itself in the way

speakers of English would expect--by expanding the abstract number-referent mode--undoubtedly because that mode of counting is too heavily laden with restrictive connotations. Instead it consists in substituting broader categories for narrower ones; yet it shows no sign that it will ever achieve a single comprehensive category approaching the uniformity of number expressions in English.[18]

One might speculate that if a people starts out with the habit of particularizing things by enumerating attributive units in reference to them, chances are they will encounter both things and situations which somehow do not conform to their perception of objects as discrete entities standing by themselves; and one might expect that awareness of such things and situations will be reflected in a differentiation of numerical forms. A cursory inspection of five of the earliest surviving texts in Japanese--the Kojiki (A.D. 712), the Norito or liturgies (A.D. 820), the Taketori monogatari (probably in existence by the beginning of the 10th century), the Ise monogatari (probably in its present form by the middle of the 10th century), and the Yamato monogatari (middle of the 10th century)--reveals that the Japanese had the habit of particularization from the beginning of their written language while at the same time they were treating some entities as attributive to others; and it also indicates recognition of situations in which normally particularized entities appear as members of a collectivity instead of as individuals.

In the Kojiki two fundamental divisions of things are distinguished by graphs representing the native suffixes -ri, -tari for counting human beings and -tu, -ti, -di for counting animals, objects, and events. In addition, there is the suffix -ka, probably originally a noun, which, together with the noun hi, makes up a series for counting days (hitohi 'one day', hutuka 'two days', mika 'three days', etc.). The remaining items classifiable as numeral adjuncts are clearly nouns in origin, but whether they are to be considered numeral suffixes or count nouns would require a more extensive investigation to decide; rather the important consideration here is that nouns, denoting distinct entities, are being treated in a way that avoids particularization of these entities and makes them attributive to something else. Entities that are treated regularly in this manner in the Kojiki are hasira 'pillar' for counting deities (presumably because those spirits were thought to attach themselves to trees and stakes), tabi 'time' for counting recurrences of an event, tosi and its bound variant -tose 'year', and yo 'night'. As one proceeds through the early texts, the corpus of such nouns increases, and it becomes evident that the expression of number in Japanese developed by a process of counting one thing as attributive to another. The following are selected examples:

E 'layer': kinudatami yae 'eight silken mats' (Kojiki: 138).

Mae 'front' for counting enshrined deities: Suminoe no mimae no ookami 'the three great deities enshrined at Suminoe' (Kojiki: 70).

Kasira 'head': Imasi no kuni no hitokusa, hitohi ni tikasira kubirikorosamu 'I will strangle to death the people of your land to the extent of one thousand head a day' (Kojiki: 66).

Maki 'scroll': Rongo tomaki 'the Analects in ten scrolls' (Kojiki: 248).

Iro 'color': ituiro no mono 'cloth in the five colors' (Norito: 396).

Tokoro 'place': Kudo Huruseki hutatokoro no miya 'the two shrines at Kudo and Furuseki' (Norito: 406).

Kusa 'kind': miyosoi no mono isokusa mari yokusa 'fifty-four kinds of apparel' (Norito: 446).

Suzi 'fiber': ke no sue hitosuzi 'one hair-end' (Taketori: 48).

Yo 'reign', 'generation', 'world': miyo no mikado 'the emperors of the three reigns' (Ise: 121); miyo no hotoke 'the buddhas of the three worlds' (Yamato: 340).

Kasane 'superimposition': koki utiki hitokasane 'one crimson gown' (Yamato: 300).

Except for the cases of a constitutive reference and the one collective, kusa, the numeral adjuncts exemplified above denote entities of a generic nature that have the effect of classifying their referents. The relationship is one of the generic to the specific, and is, of course, characteristic of modern usage as well. But it can also be expressed, though not so frequently, by forms in which the adjunct noun is identical with or similar to the referent noun, two modern examples being kootoo gakkoo gokoo 'five high schools' (lit., 'high schools five schools') and itineñsei no kumi gokumi 'five classes of first-graders' (lit., 'first-grader classes five classes'). The only restriction on this form requires that if the two nouns are identical, the referent noun should be qualified so that it denotes a species of the genus.[19] In the first example below (Ise: 125), the adjunct yo 'night' does not refer to an implied referent 'time' but to a specific referent, aki no yo 'autumn night'. In other examples it will be seen that even nouns denoting clearly independent things may be drawn into the adjunct position as sort of ad hoc generic classifiers; such a reduction of class nouns to an attributive status in modern Japanese would give an archaic flavor.

Aki no yo no	Of autumn nights,
Tiyo o hitoyo ni	Were we to think of a thousand nights
Nazuraete	As equalling a single night
Yatiyo si neba ya	And lie together eight thousand nights,
Aku toki no arañ	Would we ever be sated of love?

Yo 'generation': kamiyo nanayo 'seven generations of divine generations' (Kojiki: 52).

Tokoro 'place': Waga mi wa, narinarite nariawazaru tokoro hitotokoro ari 'As for my body, of places that in their development do not grow together, there is one place' (Kojiki: 52).

Otome 'maiden': Waga musume wa, moto yori yaotome arisi o ... 'Originally I had daughters to the extent of eight maidens, but ... ' (Kojiki: 84).

Ki 'tree': Nara no ki to iu mono o zo hutaki miki uetarikeru 'Why, they had planted two or three trees of what is called an oak tree' (Yamato: 353).

Comparing these earliest examples of compound-referent counting with the usage that obtains today, it is clear that the habit of counting one entity as attributive to another dates from the beginning of the written language. Evidently the only development during the intervening centuries consisted in expanding the corpus of numeral adjuncts with additional native words and a large infusion of Chinese loanwords, while at the same time numeral adjuncts became fixed as a form class through regular use. On the other hand, number-referent counting is not so well represented, nor are its forms so obvious. A cursory inspection of the kana texts--the Taketori, Ise, and Yamato--is sufficient to demonstrate the predominance of the compound-referent mode over the number-referent mode, and the latter seems to be confined to the kind of contexts in which it is used today. The Kojiki and Norito, however, are

written wholly in Chinese characters in a manner that obscures the distinction between the two modes.[20] But in the Norito at least are found two unmistakable examples of number-referent forms, where the particle no is represented in the original text:

momo no monosiribito 'the hundred scholars' (Norito: 400)

yahoyorodu no kami 'the eight hundred myriad deities' (Norito: 458)

These forms denote collectivities or sets and correspond exactly to the modern forms based on the collective units hyaku, sen, man, etc. Although no in this position is ordinarily not represented in the Norito texts and never in the Kojiki, we may assume that the ancients supplied it when reading such forms.

As for number-referent forms in which a number is simply juxtaposed to a noun, one cannot be absolutely certain in the Kojiki and Norito whether a suffix might not have been understood between the constituents. Nevertheless, a reconstruction like momo yaso mari muyasiro (Norito: 452) for Chinese characters that mean 'the hundred eighty-six shrines' (a set of shrines in Izumo supported by the government) is probably correct. This set is comparable to sets that appeared earlier in my examples of compound-referent counting. Ituiro, corresponding to the Sino-Japanese gosiki, denotes a conventional set of five colors: red, blue, yellow, white, and black. Miyo in the sense of 'the three worlds' refers to the past, present, and future, and in the sense of 'the three reigns' denotes the reigns of the emperors Nimmyō, Montoku, and Seiwa. Perhaps these examples are better understood as number-referent forms than as numeral compounds. But it should be noted, too, that number-referent counting of this type is not found only in expressions of collectivity. If the pronunciation of proper names can be accepted as supported by tradition, then this group of forms offers many examples of number-referent counting; for self-contained entities are regularly counted as attributive when a number expression modifies a noun in proper names. Examples from the Kojiki are yamata no oroti 'the eight-forked serpent' and yatihoko no kami 'the eight-thousand-spear deity'.

The Ise (158) offers a Sino-Japanese example of a conventional set in waga mikado rokuzyuu-yo-koku 'the sixty odd provinces of our emperors'; and on p. 116 it gives what I take to be an example of an ad hoc set in itumozi 'the five letters', though admittedly mozi is nowadays a count noun:

Sono sawa ni kakitubata ito omosiroku sakitari. Sore o mite, aru hito no iwaku, 'Kakitubata to iu itumozi o ku no kami ni suete, tabi no kokoro o yome' to iikeri. 'Some iris were blossoming most beautifully in the marsh. A certain person saw them and said, "Compose a poem on the feelings of travel by putting the five letters ka-ki-tu-ba-ta (iris) at the head of the lines."'

While this evidence is not sufficient to define exhaustively the usage of number-referent forms in ancient Japanese, it does suggest that that mode of counting was used very much as it is today, and it shows further that the two types of number-referent forms--the one with no and the one without--were in existence. Further examination would probably reveal that the numbers ending in 'ten', 'hundred', 'thousand', and 'ten thousand' could precede a noun with or without the particle, while numbers ending in units up to 'ten' combined directly with the noun. However, the major question with respect to number-referent counting is whether it originated with the Japanese or

was borrowed from China, since the forms are very similar to those in Classical Chinese. Although I have not dealt with this problem in any systematic way, I believe that the number-referent mode is original with the Japanese and that the similarity to Chinese is due in ancient times to accident and in later times to assimilation of Chinese borrowings to a preexistent native mode. The accident is hardly surprising when one tries to think what other forms a number-referent mode, or more generally, any mode that does not particularize the object of quantification might take. But more importantly, whereas Classical Chinese uses number-referent and compound-referent forms indiscriminately, the early Japanese sources indicate a sense of the appropriateness of one or the other mode to a given context. In short, the early Japanese already had semantic areas reserved for the number-referent mode--areas that they could not have inferred from their acquaintance with Classical Chinese texts--and to suppose that they only discovered those areas shortly after borrowing the alien forms seems absurd.

I cannot help but speculate that once a people establishes the habit of quantifying perceptual things by enumerating attributive units in reference to them, their language cannot avoid giving rise to a subclass of nouns that are ordinarily placed in an attributive relation to other nouns. Even if particularization is accomplished by no more than one or two suffixes, one would expect that certain inevitable concepts like collective and container units would be represented by nouns that are assimilated to the suffixes. Moreover, speakers of such a language might be expected to recognize situations in which the things they normally particularize are better treated as members of a collectivity, resulting in a minor mode of counting analogous to the Japanese number-referent mode. With these two possibilities in mind, I should like to conclude this discussion by making a few observations on Chinese.

The term 'Chinese' comprises a group of languages or dialects that both in their grammar and in their ornate and symmetrical mode of expression differ radically from Japanese and in fact resemble rather closely English. But in one respect at least--that of enumerating attributive units in reference to self-contained entities--Chinese resembles Japanese. In Classical Chinese, quantification may be expressed by counting certain entities as units attributive to the thing being quantified (Schafer 1948: 409-12), and it should be simply a matter of collecting examples to come up with a clearly defined class of numeral adjuncts consisting mostly of count nouns. On the other hand, Classical Chinese poses a problem in that the very same things, in contexts that cannot possibly be interpreted as collective, may also be quantified by simply apposing a number to a noun, either preceding it or following it. We have seen how this convention obscured numeral compounds in the Kojiki; and it also continues as one form of number-referent counting in modern Japanese. It is my impression that such written forms do not reflect any period or dialect of Chinese speech but rather have resulted from the well-known concern of Classical Chinese writers for conciseness of diction. In order to test this impression and at the same time to find out whether anything like the connotative distinction between a compound-referent and number-referent mode of counting exists in Classical Chinese, one would have to examine a text known to have an affinity with speech, perhaps the Chuang-tzu or a collection of religious homilies. This I would recommend as an interesting sideline to someone who may be studying such a text for another purpose.

In contrast to Classical Chinese, Mandarin is consistent in quantifying self-contained entities by enumerating attributive units in reference to them.

Thus a class of numeral adjuncts identical with the Japanese in being composed of suffixes and nouns has been established (Chao 1968: 589-602, 604-620). If we provisionally call the nouns that go into this class count nouns, we may say that the Mandarin count nouns largely correspond to the Japanese, inasmuch as their behavior is governed by the same semantic conditions. But the Mandarin count nouns are probably fewer in number, because there seems to be a sense of speech rhythm working in Mandarin speakers that causes them generally to avoid combining a monosyllabic numeráàal form with a dissyllabic noun. For example, items in a contract are counted as yí-syàng, lyǎng-syàng, etc. and subitems as yí-mù, lyǎng-mù, etc.; but the compound syàngmù, which denotes any item or subitem, is regularly yíge syàngmù, lyǎngge syàngmù, and so forth, where -ge is a numeral suffix. Similarly, Chao notes with respect to standard measures, which are semantically highly attributive units, that dissyllabic nouns are found either with or without the suffix, e.g. yíge gwāngnyán or yí-gwāngnyán 'one light-year', yíge mǐtǔ or yí-mǐtǔ 'one meter' (604). He also notes the same condition for the time unit syīngchī: sānge syīngchī or sān-syīngchī 'three weeks' (565). This resistance to the merging of dissyllabic nouns with numbers seems comparable to the Japanese hesitation to assimilate certain numbers to binomes, e.g. itikoomoku or ikkoomoku 'one item', itikoonen or ikkoonen 'one light-year'. But the use of -ge to signal the separation blurs the formal distinction between attributive and independent entities in Mandarin, and it virtually confines the class of numeral adjuncts to monosyllabic forms.

As to forms that correspond to the number-referent mode in Japanese, counting collectively by tens, hundreds, and so forth occurs in Mandarin as an inheritance from Classical Chinese. Examples given by Chao (595-6) include bāshí rén 'eighty people', sānchyān sywéshēng 'three thousand students', and shíwàn bīng 'a hundred thousand soldiers'. These numbers may be enlarged by the addition of -ge, which probably adds a particularizing connotation as would be the case if the corresponding Japanese forms were enlarged by suffixing -nin. Conventional sets, both those handed down from Classical Chinese as well as modern ones coined on the classical models, also occur. Chao cites wúbǎi lwóhàn 'the five hundred arhats' (595) and bā-syān 'the eight immortals' (394); and among the modern sets I have encountered sān-dàjèngtsè 'the three cardinal policies' and bā-gwó lyánjyūn 'the allied forces of the eight powers'.

Since Classical Chinese has lent numerical forms to both Japanese and Mandarin, formal similarities between the two languages are inevitable. On the other hand, the semantic similarities cannot be put down to a shared source; so that we find in Japanese and Mandarin two otherwise very different languages paralleling each other in the development of complex systems of counting that have essentially the same semantic features. Whether or not this homology is the natural consequence of an original habit of particularizing the objects of quantification by counting attributive units in reference to them, is a question that may perhaps be elucidated by examining other languages that use numeral adjuncts in comparison with this description which I have attempted for Japanese.

Notes

[1]It will have been noticed that some of the forms are transcribed as compounds and some as separate words. The difference will be clarified in the course of this discussion.

[2]The suffix -tu, -ttu refers to a category of nondescript things. It is

attached to the native numerals; hence itu- instead of the Sino-Japanese go.

[3]But this does not mean that every container can be counted as an attributive entity. The group is limited to familiar containers that are regularly used for packing or serving things. For example, baketu 'pail', tyasazi 'teaspoon', and oosazi 'tablespoon' are excluded. In order to express measure in terms of the excluded containers, a form based on the suffix -hai 'containerful' is required, e.g. baketu ni gohai no mizu 'five pails of water' (lit., 'five containers of water in a pail or in pails'). Moreover, even those containers which can be counted as measures are not treated in that way unless there is a long-standing association between the container and its contents. Thus, while five buckets of cold water in the bath may be expressed as gooke no mizu, 'five bottles of water' will have to be bin̄ ni gohai no mizu, because water does not usually come in bottles (unless they have started bottling spring water in Japan).

[4]Of course, the line that Japanese language habit draws between the two categories of things will vary from our personal conceptions and undoubtedly varies among ideolects. The only way to isolate nouns that are regularly counted without a classifier is to watch for them in usage. Still, whenever they are detected, they will be found to denote attributive entities.

[5]On the other hand, classifiers contrast with each other in such a way that those whose force has been attenuated by habitual use may be replaced at the speaker's option by less used, more restrictive classifiers that have the full value of adjectives. To give but one example: if for the attenuated -nin̄ 'human being' is substituted -mei 'name', the effect is to present human beings as items. This aspect of Japanese number expressions, however, lies beyond the scope of the present article.

[6]However, the restriction just stated needs to be modified to include the consecutive number compounds itini and nisan̄, as in itini no mono 'one or two persons' and nisan̄ no tomo 'two or three friends'. These, too, are collective expressions and may be translated as 'a few'. While itini in the sense of 'a few' belongs to the expository style of writing, nisan̄ in the same sense occurs also in speech, where, however, it is more likely to be accompanied by a classifier (nisannin̄ no tomo). In addition, it should be noted that iti 'one' also appears in this position, though infrequently: for example, iti no zettyoo ni tassuru 'to reach a peak'. In this usage, however, iti is not a number in the sense of 'one' as opposed to 'two', but rather an indefinite modifier conveying the idea of 'a certain one', 'a particular one'.

[7]My examples were selected to refer to human beings so as to demonstrate unmistakably the omission of a classifier that is ordinarily not omitted. The reader should not confuse this mode of counting with forms like zyuu go no isu 'fifteen chairs', for zyuu go in this environment belongs to the series for counting nondescript objects. That series requires the native numerals with the classifier -tu, -ttu through 'nine'; 'ten' is rendered by the collective form too, and thereafter the series is represented by Sino-Japanese numbers without a classifier. Since this procedure is obligatory, the forms used in counting nondescript things are not comparable to the optional forms we have been considering. Moreover, they are discriminated syntactically from the forms under consideration by their ability to occupy the adverbial position; for example, Isu ga zyuu go aru 'There are fifteen chairs' is lit-

erally 'There are chairs to the extent of fifteen'. This ability they share with forms composed of a number and classifier. On the other hand, these numbers without classifiers in the nondescript series are closer in their semantic value to numbers without classifiers generally--a fact that is readily appreciated by contrasting zyuu go no isu with the highly particularizing rendition of 'fifteen chairs', zyuu goko no isu (-ko 'tangible item').

[8]Mention of restrictions or the absence thereof refers to numerical units, not to numerical forms. Actually only numbers derived from the numerals of the Sino-Japanese system may be apposed to class nouns, whether with or without the particle no. The Sino-Japanese system comprises the Chinese-derived numerals as well as the native numerals yon 'four' and nana 'seven'.

[9]But in this connection iti must be distinguished from the other numbers. In the sense of 'a certain one' or 'a particular one', apparently iti may precede any class noun. Moreover, this combination is losing its formality and gaining currency in speech. Compare the following examples with the one given in note 6: kyodai na mekanizumu no iti haguruma 'a cogwheel in a gigantic mechanism', iti kookoo no kootyoo 'a highschool principal'. Actually in this environment iti has three uses. As a number in the sense of 'one' as opposed to 'two', it is no different from the other numbers with respect to the nouns that follow it and the contexts in which it occurs. Its third use is in the sense of 'one whole'. The usage is Chinese, and the nouns that combine with iti when it has that meaning are restricted to those derived from Chinese. Furthermore, in this case the last syllable of iti will assimilate to the initial consonant of the noun if the consonant is unvoiced, thus producing such contrasting forms as iti syoogai 'a lifetime' and issyoogai 'one's whole lifetime'.

[10]When dealing with the behavior of Chinese-derived forms (those having the on reading) in Japanese, it is useful to distinguish between monomes and binomes. Monomes are forms represented by a single logograph, while binomes are represented by two logographs. In the case of numbers, monomes are more readily submerged into compounds than binomes. Assimilation may take place when on the number side appear the numerals iti, san, roku, hati, zyuu, hyaku, sen, and man, and on the noun side appears a monome with an initial k, s, t, or h. Iti, hati, and zyuu assimilate to all these consonants, while roku and hyaku assimilate only to k and h. H becomes p when a number assimilates to it and also when it follows saN, seN, and maN. When the noun is a binome, a native word, or a Western loanword, the number tends to pull away from it, and the forms affected by assimilation are reduced to roku, zyuu, and hyaku on the number side and initial k, s, and t on the noun side. In transcribing forms belonging to the number-class noun type of counting, I make it a rule to transcribe number-monome forms as compounds even when assimilation does not occur, and to transcribe the forms based on binomial and other kinds of nouns as separate words unless they exhibit assimilation.

[11]The earlier sets have si for 'four', reflecting no doubt a general use of that numeral in earlier times. In modern coinages yon replaces si.

[12]A numerical form in the postnominal position has an inventorial tone wherever it occurs, and with a classifier is not at all uncommon in both speech and writing: tomodati gonin ni atta 'met five friends'. This order with its special connotation is, of course, paralleled in English, and also

in Mandarin (Chao 1968: 559-560). But in Japanese, since the order is not confined to inventories, it is free to carry its connotation to a variety of contexts.

[13]Partitive count nouns are limited to a few conventional objects. Otherwise the partitive idea is expressed either by a suffix, as in gorin no kiku 'five blossoms of chrysanthemum', or by a form that presents the part as a self-contained object of a certain kind, as in kiku no hana itutu (or gorin) 'five chrysanthemum blossoms'.

[14]There are apparently only four suffixes that do not fit the description of sources given below. They are the native forms -tu, -ttu with the obsolete variants -ti, -di for counting nondescript objects, etc. and -ri with its obsolescent variants -tari, -ttari for counting human beings, together with the Classical Chinese loanwords -mai for counting flat objects and -ka with its variant -ko for counting things as tangible items. The origin of the native forms is lost in the prehistory of the language; and the Chinese forms are bound in Classical Chinese, though they must have been free forms at some very early date.

[15]Nonce forms have the same semantic value as numeral compounds and seem to be ad hoc formations to fill isolated gaps in the network of number expressions. Examples are ippen 'a fragment', hitoiki 'a single breath', and hitome 'a glance'. Expressions using forms higher than 'one' are rare; but there are, for example, hutakoto ka mikoto 'two or three words' (spoken) and the series hitoeki 'one station' and hutaeki 'two stations' for giving rough measurements of distance on a train line. In addition, certain sharp acts may be counted by combining the suspensive form of the verb with a number, as hitouti 'one blow', hutauti 'two blows', etc.; but such series apparently do not go beyond 'four'.

[16]The patterns of assimilation in numeral compounds vary only slightly from those in compounds formed on class nouns. See note 10. The main differences are found in a tendency for iti to assimilate to binomial count nouns (iti + syurui becomes issyurui, iti + koomoku becomes itikoomoku or ikkoomoku) and in some cases of initial h changing to b after a nasal instead of to p (san + -hon becomes sanbon).

[17]These two aspects are, however, reflected in the syntax of the numeral compound and its referent. While both kinds of compounds occupy the prenominal and adverbial positions with equal freedom, the postnominal position, which is open to quantitative compounds, is virtually inaccessible to constitutive compounds. Moreover, many (but not all) constitutive compounds may be modified by their referent, but this seldom happens with quantitative compounds. These generalizations are illustrated in the following examples:

Quantitative	Constitutive
gosatu no hon o yomu 'to read five books'	gosyoo no hon o yomu 'to read a book of five chapters'
hon gosatu o yomu 'to read five books'	. . . . .

hon̄ o gosatu yomu	hon̄ o gosyoo yomu
'to read five books'	'to read five chapters of a book'
. . . . .	hon̄ no gosyoo o yomu
	'to read the five chapters of the book'

'To read five of the books' is hon̄ no uti (or naka de) gosatu yomu, where hon̄ no uti (or naka de) is an adverbial phrase.

[18]The reduction of categories is taking place within the division of objects, but it is far from complete; and there is no tendency at all to merge the four ontological divisions that underpin the system--the divisions of gods, men, animals, and objects and events.

[19]There may be exceptions to this rule. For example, the Kojiki (86) has sono take wa tani yatani ni watarite 'with its length extending across valleys eight valleys'. But the whole passage, though intended to be read in Japanese, is written in Chinese characters, and the reconstructed Japanese version cannot be taken as conclusive. The adjunct tani 'valley' is written with a different graph from the referent tani, leaving the possibility open that they may represent two different Japanese words.

[20]Because of the liturgical nature of the texts, most of the number expressions in the Norito belong by connotation to the number-referent mode in that they denote sanctified collectivities that recur again and again. The Kojiki, however, contains many expressions that by connotation belong to the compound-referent mode, requiring the addition of -tari or -tu. Unfortunately the writer of the Kojiki followed the convention of Classical Chinese that permits a number to precede or follow a noun directly in any context, and did not represent the suffixes unless they were denotatively essential to the meaning. Editors of the Kojiki, beginning with Motoori Norinaga (1730-1801), have supplied the suffixes in their attempts to reconstruct the text as it must have been read by the ancients; but whether they were guided in this by their notions of what ought to be or by comparison with the kana texts, I cannot ascertain. At any rate, there is no great problem here unless one insists on the possibility (a most unlikely one) of a drastic change in the use of these suffixes during the two centuries between the Kojiki and Taketori. The reconstruction of the Kojiki text is largely consistent with my understanding of the difference between the compound-referent and number-referent modes; yet there are a number of exceptions, one of which I will cite here: mitugi yaso mari hitohune 'a tribute of eighty-one boats' (Kojiki: 290). I would have expected yasodi mari hitotu no hune; but without knowing the provenance of this and similar exceptions--whether they are due to an editor's arbitrary reconstruction or have the support of tradition--I can do nothing in the way of rationalizing them.

References

Chao, Yuen Ren. 1968. A Grammar of Spoken Chinese. Berkeley and Los Angeles: University of California Press.

Kojiki, Norito. 1958. Nihon koten bungaku taikei, vol. 1, ed. by Kurano Kenji and Takeda Yukichi. Tokyo: Iwanami.

Schafer, Edward H. Jr. 1948. Noun Classifiers in Classical Chinese. Lg. 24.408-13.

Taketori monogatari, Ise monogatari, Yamato monogatari. 1957. Nihon koten bungaku taikei, vol. 9, ed. by Sakakura Atsuyoshi et al. Tokyo: Iwanami.

Department of Germanic and Slavic Languages and Literatures
University of California, Santa Barbara
Santa Barbara, California 94720